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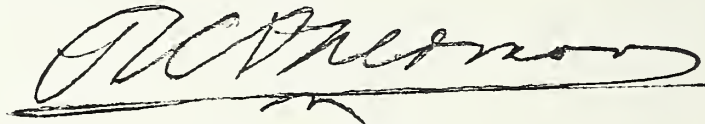
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Cotton in IRAN

FOREWORD

Cotton is an important crop in Iran. Production, mill consumption, and exports have risen sharply in the past few years. This study examines and reports on the recent, present, and prospective place of cotton in the economy of Iran. It is one of a continuing series that assess the competitive aspects of agricultural development in the various cotton producing areas of the world.

In making the study, the author had the assistance and cooperation of various public officials and many agricultural, business, and textile industry leaders in Iran. Their generous support was invaluable. The debt of the author also extends to the U.S. agricultural attache and his staff in Tehran, and to those officials in Washington who reviewed the manuscript and made helpful suggestions concerning it.



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COTTON IN IRAN

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SUMMARY AND CONCLUSIONS

Iranian cotton production has trended steadily upward in recent years. Exports, too, have risen, but at a much slower rate than the sharp climb in domestic use. During the 1963-64 crop year, production was at a near-record level and exports are expected to establish a new record high. On the other hand, consumption in 1963-64 appears to be at the same level as the previous season but below the peak established in 1961-62.

The Third Plan for Agricultural Development, covering the years 1962-67, spells out proposals for increasing cotton production to 575,000 bales (480 lbs. net). This is an increase of only 50,000 bales, or less than 10 percent over the 1963-64 crop. According to the Plan, no additional acreage will be devoted to cotton, but improved cultural practices will account for the expanded output. In all probability, the goal will be reached, but the primary reason is more likely to be expanded acreage rather than improved cultural practices. This projection is based on the assumption that land reform will not prove a major deterrent to cotton production.

Cotton acreage in Iran is expanding, and in 1963-64 is estimated at nearly 1.0 million acres. This expansion is occurring almost entirely in the Caspian Sea region. There are several reasons for the continued acreage expansion in the Caspian area. Cotton, considered by producers to be an excellent cash crop, is replacing wheat on land coming under irrigation. Also, cotton is being planted on newly irrigated land that, because of a shortage of water, previously had been used for pasture. The pattern of farming has changed in this area from peasant-type agriculture to a cash crop economy.

Little change is expected in cotton acreage outside the Caspian region, with the possible exception of the land coming under irrigation in the developing Khuzestan irrigation project in southwestern Iran. This project has several hundred thousand acres of potentially cultivatable land, and in the northern reaches of the project cotton probably will be one of the crops planted. The project is primarily aimed at increasing sugarcane production, and almost all of the initial effort has been aimed at this crop; but as cane production reaches a level high enough to satisfy domestic requirements, cotton and other cash crops can be expected to receive more attention.

Exports of cotton are Iran's second largest earner of foreign exchange, being exceeded only by petroleum and petroleum products. Cotton exports in 1963-64 are expected to be at a record high of 290,000 bales and reflect the rapid increase in production. Domestic consumption of cotton has climbed at an even faster rate than exports and in 1962-63 even exceeded exports; however, partly because of the increased usage of rayon staple fiber,

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consumption has become relatively stable. Consequently, in 1963-64, consumption will probably remain the same as in 1962-63--230,000 bales.

The 5-year Plan for agriculture has no special emphasis on producing cotton for export. Planned exports in 1966-67 are 300,000 bales, or 10,000 above the 290,000 bales expected to be shipped in 1963-64. During the 5 years ending in 1963-64, exports rose from 190,000 to 290,000 bales, or at a much faster rate than the anticipated increase for the next few years. Unless some rather abrupt changes in the cotton situation occur, exports in 1966-67 probably will exceed the goal set in the Plan.

Most of the varieties of cotton produced in Iran are of U.S. origin and the quality of Iranian cotton is such that it competes directly with U.S. cotton in import markets. Thus, as cotton production and exports expand, U.S. growths will meet increasing competition from Iranian cotton.

Iran's cotton textile capacity has reached a level high enough to meet most local demand at current consumption rates, except for the finer qualities of cloth. Currently there is a ban on imports of spindles except for repair parts, and there are around 730,000 spindles currently in place. Looms can still be imported, and they are coming in mainly from Japan and Soviet Bloc countries.

Consumption of textiles in 1962 is estimated at about 390 million yards, or about 18.5 yards per person. Agricultural development plans for the period ending in 1967 forecast consumption at 514 million yards which will be sufficient to increase per capita use to around 21 yards. Production is expected to remain at the current level of 437 million yards annually, and 77 million additional yards are expected to be imported. The imports will be "of those fabrics whose production in Iran require new technology," or finished quality cloth. An estimated \$15 million in investment will be needed for finishing equipment for textiles, mainly dyeing and printing equipment, but the development plan foresees little change in spindle numbers through 1967.

Cotton consumption in Iran in both 1962-63 and 1963-64 is estimated at 230,000 bales, down slightly from the 250,000 bales consumed in 1961-62. Heavy stocks of unsold textiles at the beginning of the 1962-63 season, estimated at 150 million yards, are part of the reason for using less cotton. Another is the rapidly expanding use of imported rayon staple fiber. In 1960, imports of rayon staple were 9,128 metric tons, in 1961, they were 16,395 metric tons, and estimates for 1962 range up to 25,000 tons.

Although rayon delivered to mills is about 10 to 20 percent more expensive than cotton, mill owners figure spinning losses in processing cotton just about offset the difference. Mills prefer to gear operations to rayon because credit is extended by Japanese and European exporters for periods of 4 to 6 months, and even up to a year to mills with good credit ratings, while cotton must be purchased for cash. Under the textile marketing system in Iran, mills are obliged to extend credit for 4 to 5 months on sales of finished goods. This results in a sizable cash incentive to use rayon, since capital not tied up in inventories can be loaned at profitable rates of interest.

ACREAGE, YIELD, AND PRODUCTION

Iranian cotton production has increased sharply in the past 15 years, but most notably in the past 5 or 10 years. Production reached a record 530,000 bales in 1961-62, almost five times greater than the 92,000-bale crop of 1948-49, and almost double the 275,000-bale harvest in 1955-56. Most of it reflected added acreage and improved yields in the Gorgan and Mazandaran (Caspian Sea) regions. In Gorgan, expanded irrigation has greatly enhanced cotton's competitive position to wheat. Also, the introduction of a new higher-yielding variety in the mid-1950's, Coker-100 Wilt, encouraged larger cotton acreage in these areas.

Cotton production in 1963-64 is estimated at 525,000 bales, only slightly below the 1961-62 record. Cotton acreage in 1963-64 is believed to have totaled 988,000 acres, essentially the same as in 1961-62.

Available figures on Iranian cotton acreage, yield, and production leave much to be desired. Reasonably reliable production data have been established, however, because almost all Iranian cotton moves in commercial channels. From production figures, yield figures, adjusted for weather conditions, have been derived. And by using both production and yield data, an acreage series has been developed. Except for recent ginning reports, few of these estimates are of official origin; however, acreage and yield data represent the consensus of a number of people associated with the cotton industry in Iran.

Iran's overall average cotton yields have increased significantly in recent years. Yields in 1955-59 averaged 238 pounds per acre compared with 192 pounds in 1950-54, and 182 pounds in 1945-49. Some of this increase probably reflects improved statistical data, but a large share results from expanded acreage in the higher yielding regions of the country, and from the introduction of Coker 100-Wilt seed in 1955. Varieties grown prior to the introduction of Coker 100-Wilt had deteriorated considerably, and their yields were low. Even though 100-Wilt seed rapidly became mixed with older varieties, especially during the early years of introduction, yields improved because of the better quality of the mixed seed.

Probably because of a limited amount of seed mixing and increased nematode populations, the apparent resistance of Coker 100-Wilt to Fusarium Wilt is now practically nil in Iran, and yields can be expected to decline unless resistant varieties are introduced. Several variety tests have shown that Acala 1517-C has more tolerance than Coker 100-Wilt to Fusarium and Verticillium Wilts, and research personnel say that efforts to produce commercial quantities of this seed will be made over the next few years.

Acreage naturally has not risen as fast as production, inasmuch as production has been influenced by the higher yields. However, acreage estimates are based primarily on production and estimated yield data, rather than on reliable acreage surveys, so acreage data can be considered only as rough, but nevertheless usable, approximations. Also, cotton is often planted along irrigation canals and ditches, making estimation of acreage extremely difficult.

Cotton acreage in 1963-64 is estimated at about 988,000 acres. This record area is 4 times larger than that of 1947-48, and is almost 50 percent larger than the 685,000-acre annual average in 1955-59. Large areas of potentially tillable land still are uncultivated in Iran, but irrigation is necessary to make most of it productive. Small, relatively inexpensive irrigation projects can increase productivity in many areas, but development could be slowed by land reform. Large-scale irrigation projects, such as the Khuzistan project in southwestern Iran, are so expensive that available capital resources will have to come from the government. Too, there are few places in Iran suitable for large-scale development because rough terrain and salt marshes cover much of the country.

Several factors will play an important role in determining the future of cotton acreage in Iran, not the least of which is the current land reform program. Prior to 1964, the land reform program had little impact on cotton production. Mechanized farms cultivated with hired labor have been exempt from land reform programs. If this exemption continues, the impact in the major producing region of Gorgan-Gonbad will be minimal. In other areas, however, especially where agriculture is organized on a village basis, land reform may directly affect cotton producing areas.

Also, the future of cotton will depend on conditions already prevailing in the areas, and upon the particular manner in which the land reform and other social and economic changes are made in any given area. In areas where food production is usually low, and not supplemented with dependable supplies from elsewhere, the new landowners may give primary attention to food crops, at the expense of cotton production. On the other hand, where local food supplies are already fully adequate, or where special steps are taken to promote cotton as a cash crop, its production could be maintained or even increased under conditions of land reform.

The price ratio between cotton and wheat currently favors cotton. The government loosely controls wheat prices to assure low-priced bread to the people. A change in this price ratio that raises wheat prices could reduce cotton acreage. Wheat is the most important crop competing with cotton.

A labor shortage for the seasonal work required by cotton producers may develop in the Gorgan-Gonbad producing region. While this will tend to slow acreage expansion, it is unlikely to halt its upward trend. Mechanical cotton pickers could be used to overcome the labor shortage but their use would involve large capital outlays, repair facilities, and modifications in gin facilities.

Better adapted varieties with higher yields also could encourage farmers to plant more cotton. Improved planting seed offers a rather painless way to the individual farmer to increase yields without a large capital outlay. Other methods of increasing yields such as use of fertilizer and insecticides are generally considered too expensive, especially since reasonable credit often is unavailable to purchase these items.

COTTON AND THE THIRD PLAN FOR AGRICULTURE

The Third Plan for Agricultural Development was drawn up in 1960 and 1961 for the period from 1962 to 1967. In the Plan, Iranian officials set a cotton production goal of 575,000 bales by 1967. This target represented a 30-percent increase over the estimated 435,000-bale crop harvested in 1960. (Since the Plan was drawn, 1960 production has been revised to 456,000 bales.) No increase in acreage was planned; instead, improved yields were to supply the envisioned 140,000-bale increase. Factors contributing to higher yields and the relative importance of each to the total production increase, according to the Plan, were as follows:

<u>Factors</u>	<u>Contribution</u>
	<u>Bales</u>
Seed improvement (increased yields and higher lint outturn).....	72,000
Fertilizer application.....	46,000
Improved cultural practices, including use of insecticides.....	22,000
Total	140,000

Increased domestic use was to absorb around 90,000 bales, and exports were to rise around 50,000 bales.

Production goals will likely be met or even exceeded unless the political and economic situation in Iran changes sharply. Contrary to the Plan, however, expanded acreage probably will account for more of the increase than higher yields. In 1961, a year before the Plan was to start, production was 530,000 bales, or only 45,000 bales short of the 575,000-bale goal. Thus, for the 5-year Plan period, production would need to increase only 8.5 percent to achieve the target.

Production gains over the last several years are attributed to expanded acreage, mostly in the Gorgan-Gonbad region. Acreage increases are expected to continue; if they do, they will raise the average national yield, since yields in Gorgan-Gonbad are sufficiently above those of other areas to raise the average.

Cotton consumption by local textile mills may not reach the 275,000-bale level envisioned by the Plan. The government has prohibited imports of additional spindles on the premise that present capacity is sufficient during the Plan period. Further, use of rayon staple fiber on cotton spinning equipment has been rising rapidly. Cloth production may increase slightly as industry efficiency improves, but unless the government restricts rayon imports, much of the increased raw fiber used to make cloth will be rayon, not cotton.

Exports of cotton, planned at about 20 percent above the 245,000 bales shipped abroad in 1960-61, may be somewhat above the targeted 300,000 bales inasmuch as exports in 1963-64 have already been estimated at 290,000 bales.

If production and consumption predictions for the next few years are realized, exportable supplies will easily exceed goals set forth in the Plan.

VARIETIES

Two types of cotton are produced in Iran. Upland cotton, all derived from U.S. Upland varieties, accounts for over 96 percent of the crop. The rest is a short, harsh Asiatic cotton, known locally as Boomi cotton. Efforts have been made to introduce extra-long staple cotton, but thus far, little success has been achieved.

The most important Upland cotton now produced is Coker 100-Wilt. This variety was introduced in the mid-1950's and gained acceptance so rapidly that by 1961-62, almost 75 percent of the total output was 100-Wilt. The rapid spread of 100-Wilt is attributed to its popularity with both Cotton Board and privately owned gins. These gins distribute almost all the planting seed used in Iran, and since the lint turnout and quality of 100-Wilt generally was much better than those of varieties then being produced, use of this seed quickly spread throughout most of the northern half of the country. Much of the 100-Wilt produced runs Middling or better with a staple length of around 1-1/16 inches.

Prior to the widespread acceptance of 100-Wilt, another variety of Coker cotton, known locally as Cokers or Cookers, was the dominant variety of cotton. Reportedly introduced by Coker's Pedigreed Seed Company after World War II, this cotton soon became the most important variety used. Today, Cokers is seeded only in some minor producing areas where it still accounts for a sizable share of the crop. The quality of Cokers has degenerated badly since its introduction. Mixing has reduced quality, and gins were not careful to distribute good seed, leaving no way to replenish supplies with pure seed.

A small quantity of Filistani cotton is still produced commercially in Iran. This Upland cotton, originally a Weber variety from the United States, was introduced in 1925 in the village of Filistan, and the name of the village was given to the cotton. Although now badly mixed, the quality of Filistani is relatively good, and grades of Middling and an average staple length of around 1 inch are not unusual. Filistani production is declining and accounted for about 9 percent of the crop in 1963-64.

The only other variety of Upland now of importance in commercial production is American or Americani. This variety, a badly mixed cotton now produced mainly in the Fars and Meshed regions, was introduced in the mid-1920's. Although the seed came from Turkistan in the USSR, it was believed to be of U.S. origin, and so it was called American. Staple length runs from 3/4" to 7/8", and quality generally is Strict-Low Middling or below. Because of the low quality, efforts are being made to discourage its production.

Experiments have been conducted with U.S. and Russian Upland cotton in an effort to find varieties that are resistant or tolerant to Verticillium and Fusarium Wilts. The most promising variety thus far appears to be

Acala 1517-C. It is possible that Acala 1517-C may shortly be the dominant variety if commercial production is as successful as tests indicate.

Boomi cotton is a harsh short-stapled cotton native to Iran. Staple length averages around 1/2", and micronaire runs 6.0 to 7.0. Almost all Boomi is used by the village handloom industry in areas where it is grown. Some Boomi moves from Isfahan, the main center of production, to the north-western Province of Azerbaijan for use in coarse cloth and padding in winter clothing.

COTTON PRODUCING AREAS ²

Cotton production in Iran is fairly concentrated from a volume standpoint, but small acreages are scattered throughout the country. The relative importance of the different producing areas has shifted sharply during the past 15 years. In 1947-48 the Gorgan plain produced less than 10 percent of the total cotton output; now this area produces a substantially larger crop and 40 percent of total output. Greater production also occurred in Khorasan, Mazandaran, Tehran, and Fars, but because of the exceptional rate of gain on the Gorgan plain, their relative share of the crop has declined. Production is declining elsewhere.

TABLE 1.--Seed cotton Iranian production by area, 1947-48 and 1961-62

Area	1947-48		1961-62	
	Production	Percent of total	Production	Percent of total
	<u>Metric tons</u>	<u>Percent</u>	<u>Metric tons</u>	<u>Percent</u>
Gorgan-Gonbad.....	5,360	9.2	158,928	42.2
Mazandaran.....	15,840	27.3	93,045	24.7
Khorasan.....	15,935	27.5	60,551	16.1
Tehran.....	3,710	6.4	28,876	7.6
Fars.....	4,125	7.1	23,539	6.3
Azerbaijan.....	1,800	3.1	3,701	1.0
Isfahan.....	4,700	8.1	3,350	.9
Kerman.....	3,600	6.2	1,792	.5
Other.....	2,950	5.1	2,803	.7
Total.....	58,020	100.0	376,585	100.0

Production methods and climatic conditions differ greatly among the more important growing regions. For this reason, each area is discussed separately in order of current importance.

Gorgan-Gonbad

The Gorgan-Gonbad area is roughly enclosed by the Atrak and Gorgan Rivers which flow southwest and empty into the southeastern corner of the Caspian Sea. The Atrak River forms the Iranian-Russian border near the

²In this section comparisons are based on the seed cotton data in Table 1 inasmuch as production of lint in the various producing areas is not readily available.

Caspian, and the Gorgan River parallels the Atrak 50 to 80 miles to the south. Between them, there is a large fertile alluvial plain which extends 10 to 50 miles farther south of the Gorgan River. This fairly wide valley is one of the larger tillable areas in Iran. Rainfall, heaviest around the Caspian and dropping considerably in the upper reaches of the Rivers, ranges from a few inches to more than 25 inches. Excluding the developed part of Khuzistan in southwestern Iran, the Gorgan-Gonbad region offers the greatest potential for agriculture of any other section of the country. Much of it is under cultivation, but because of the inadequate rainfall, farming is very extensive. Irrigation wells allow a switch to more intensive cropping patterns, and cotton has been the principal crop planted.

The Gorgan-Gonbad region is experiencing rapid agricultural growth, mainly attributable to the development of well-type irrigation. Transportation has also sped up growth--a railroad now connects the city of Gorgan with much of the rest of the country, and roads passable the year around connect the more important towns and cities.

The extensive-type farming pattern of the area prior to widespread introduction to irrigation supported relatively few people, and landholdings were sizable. This limited population relative to the available acreage resulted in large farms and continues even where irrigation permits greatly intensified farming practices. Much of the land that has come under irrigation, whether it was former wheatland or pastureland, is now being planted to cotton.

This area tends to be unique in the Middle East. In many of the pockets of cultivation in the Middle East, climate and weather exclude production of a number of crops. Generally, when variety is possible, food crops and fodder crops have first claim on the land and cash crops are produced only after first meeting food and fodder needs. However, on the Gorgan plain a variety of crops can successfully be cultivated, and its farmers are turning to a "one crop" economy--cotton.

The terrain of the Gorgan region is suitable for mechanized farming, and an estimated 80 to 90 percent of the land in cotton is plowed with tractors. This does not mean mechanization is complete, or even close to completion. The land is plowed with tractors in late winter, and disked once or twice before planting time. Cottonseed is then sown broadcast by hand and disked into the ground. All further cultivation and harvesting is by hand. About 80 percent of the land is prepared in this manner, the other 20 percent is both row-planted and cultivated mechanically.

Use of fertilizer and insecticides is practically nonexistent. Because much of the land is newly cultivated, fertilizers, as yet, are not vital to profitable yields. Their use and the timely application of insecticides, especially to control bollworms, would undoubtedly increase yields.

A tight labor situation may cause some slowdown in the future expansion of cotton in Gorgan-Gonbad owing to the area's sparse population. Cotton production normally requires a much larger work force than wheat, but because of the seasonal nature of cotton production, there will be no strong inducement for labor to move into the area.

Some of the labor requirements can, of course, be met with mechanization--a fairly expensive alternative. Farmers are more likely to plant additional wheat, at least for the next few years. Wheat harvesting machinery is already available. Also, grain combines are much less expensive than cotton-picking machinery.

Acreage and production of cotton probably will continue to expand in the Gorgan-Gonbad region, but at a much slower rate than in recent years. This assumes that land reform programs will continue to exempt large mechanized farms using hired labor. Profits from cotton are sufficiently above those of easily adapted alternative crops to assure cotton acreage at maximum levels consistent with labor, capital, and equipment availabilities.

Mazandaran

The fairly mountainous Mazandaran area lies immediately south of the Caspian Sea. Cotton production has increased substantially in this area but its share of total production has changed little since 1947-48. About one-fourth of the 1961-62 crop was produced in the region, only slightly below the 1947-48 share.

Production is confined to a narrow coastal plain and the several narrow valleys with tillable land. While some of the cotton produced in Mazandaran is cultivated mechanically, a sizable share is produced by more primitive methods, especially in the valleys where tillable land areas tend to be too small for profitable investment in heavy equipment. Little of the cotton in Mazandaran is irrigated. Rainfall is erratic but averages around 40 inches--sufficient for fairly good cotton yields.

This area is more heavily populated than the Gorgan region, and the "village" system of farming is much more prevalent. This system, the major factor involved in the land reform program, operates along the lines of the European feudal estate of several centuries ago. The landlord owns the village and surrounding lands. Peasants live in the village and work the land, generally on a share basis. Land reform is aimed primarily at breaking the feudal land tenure system and creating a class of owner-operators.

Unless land reform is implemented in such a way as to encourage or even insist upon the maintenance of cotton production, the new landowners may plant more food crops, mainly wheat, at the expense of cotton. The limited land resources will prevent much expansion of total farm acreage, and the little managerial talent left in the villages will lose previous authority to encourage improved cultural practices. Consequently, yields of all crops may decline, for a while at least. On the other hand, the "magic of ownership" may provide significant incentives for better cultural practices and improved yields.

Insect damage is heavy in this area, and is associated mainly with the relatively heavy rainfall. Diseases, too, cause severe losses each year--in particular, Verticillium Wilt--but root-rot losses are also heavy because of the humid condition that prevails during the planting and early growing seasons. Fusarium Wilt results in serious losses in restricted areas.

Little is done for control of either insects or diseases; but control practices, some of which would be fairly costly, could greatly improve yields.

Meshed (Province of Khorasan)

Cotton production in the Meshed area is confined to the foothills of its rugged mountains and lower valleys. Almost without exception, cotton is irrigated since rainfall averages only around 5 inches annually.

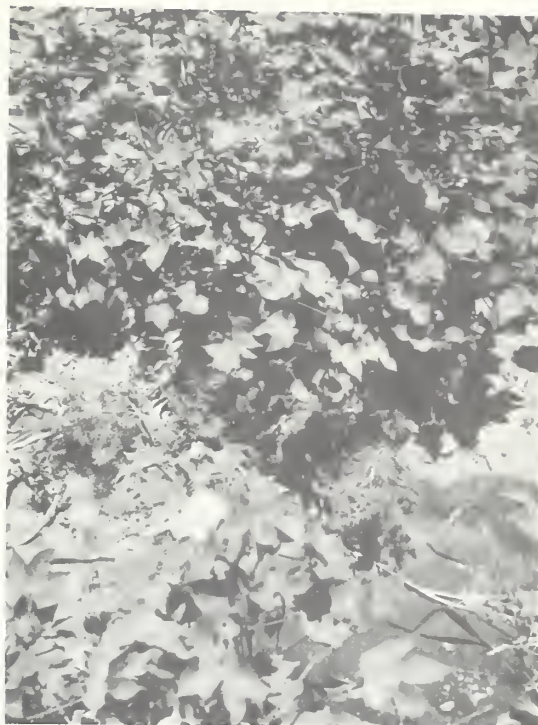
The Province of Khorasan, the largest in Iran, occupies the entire northeastern corner of the country and is bordered on the north by Russia and on the east by Afghanistan. The southern half is made up of sparsely settled dry mountains or salt deserts. Meshed, the capital city, lies in the northeast corner of Khorasan, and the Province's cotton production is concentrated in the west and immediate south of Meshed.

Cotton growing has increased fourfold in this area in the past 15 years. However, as with other older producing areas, Meshed's relative share of total cotton output has been outpaced by the rapid increase in the Gorgan area. Khorasan farmers currently produce about 16 percent of Iran's cotton, compared with more than 27 percent in 1947-48.

Meshed cotton is irrigated from ghanats, which are extremely ancient irrigation devices. Ghanats are built by digging a series of wells and connecting them by tunnel. Usually the mother well is dug in foothills of a mountain range, and each succeeding shaft, slightly less deep, leads away from the foothills to more level land. Eventually, water is brought to the surface without the aid of pumps by connecting the vertical shafts with the horizontal tunnel. Although ghanats are difficult to construct and maintain, they are a fairly efficient way to move water underground, except in porous soil formations. In an arid country such as Iran, high rates of evaporation make surface movement of water for long distances unfeasible. A few areas are watered by streams through gravity flow channels. Deep wells and power driven pumps could help overcome some of Meshed's water supply problem, but not many wells are being dug.

Most of the Meshed farming region is also on the village system. Although villages are few, owners are being encouraged to volunteer their farms for government distribution. Otherwise, the government is pledged to intervene. Under such conditions, landlords obviously are unwilling to invest in deep wells, and after distribution, the new landowners are not likely to have the capital for such investment for a number of years. The government may help a few villages, but even its resources are limited and will not cover all of the many projects and services necessary to improve the lot of Iranian farmers.

Here too, land reform could reduce cotton acreage if not accompanied by programs to encourage the maintenance of cotton acreage. However, people in this farming area are fairly well fed, and major changes in the cropping pattern are unlikely.



Iran's cotton production and exports have expanded rapidly during the past 5 years. Cotton is now the country's major agricultural export crop, and a significant competitor of U.S. cotton in world markets. Industry scenes, clockwise beginning in upper left corner: baled cotton going to port of Khorramshahr, where it will be shipped abroad; cotton blooms and unopened bolls; worker loads 500-pound bale onto truck; a Tehran gin; and bags of Caspian Sea seed cotton arrive in city for ginning.

Tehran

The city of Tehran lies along the southern foothills of the Elburz mountain range and is the center of considerable farming activity. The Elburz range lies immediately north of Tehran and forms an effective line of demarcation between the heavier rainfall of the country around the Caspian Sea and the deserts of the central plateau to the south. Rainfall around Tehran averages 6 to 10 inches annually, and irrigation is necessary to produce most crops. Ghanats, streams, and power-driven pumps are all used, but ghanats are the major means of irrigation.

The Tehran producing region, which begins about 60 miles east of Tehran and runs about 100 miles to the west, produces around 7 percent of the annual outturn of Iranian cotton, about the same as in 1947-48. Production in absolute terms has increased over 600 percent, or at approximately the same rate of increase as total Iranian production.

Competition for irrigated land is more pronounced in the vicinity of Tehran than in other areas. However, nearness to this large urban center of over two million people has encouraged a more rapid development of water resources. Food crops, mostly fruits and vegetables to be sold fresh in the city, claim a large share of the available irrigated land. However, for the present at least, water resources are more than adequate to supply local needs of fruits and vegetables. Food grain and vegetable oil needs are not met locally, but there is little likelihood that these crops will have sufficiently high yields under irrigation to compete with cotton for land.

For the future, no rapid expansion of cotton acreage in this region is envisioned. Population is rising rapidly, and as additional land becomes irrigated, it will be used for vegetable or fruit production.

Cotton producers in the Tehran area use improved cultural methods more generally than in any other area of Iran. More fertilizer and insecticides are used, a larger share of the crop is planted in rows, and labor is plentiful.

Province of Fars

Cotton production is scattered through much of the Province of Fars, which is located in south central Iran. Most of the Province is extremely hot and dry. The city of Shiraz is near the northern fringe of the cotton producing region, and small cotton plots are widely scattered to the south and east of the city.

Around 6 percent of Iran's total cotton crop is produced in Fars, about the same share it produced in 1947-48 when Iran's overall production was much smaller. Fars is the last stronghold for American cotton, the variety that has degenerated considerably since its introduction from Russia in the mid-1920's.

Land tenure in Fars generally is of the village-system type. All of the area is dependent upon irrigation, and villages are located close to available

water. During 1954-58, a sizable number of small irrigation wells were dug and over 1,000 electric and other power pumps were installed under the Community Development Program. Pump installations have continued, but at a much slower rate since 1958. Most of the available water from pumps, ghanats, and streams is used for dates, citrus, and food crops, but small acreages of cotton are grown in many villages.

Land reform, if extensive, might affect cotton production more severely in this area than in most unless positive programs are put forward to encourage the maintenance of production. As village chiefs lose their authority, land not planted to dates or citrus is likely to go into food crops for local consumption.

Isfahan

Agriculture in the area around the city of Isfahan is confined to the valleys and plateaus scattered among mountain ranges. Except for small grains, few crops can be produced without supplemental water, since rainfall averages less than 10 inches annually.

Isfahan is the last stronghold of Boomi cotton in Iran. Ironically, Isfahan is also the textile center of the country, but no Boomi cotton is used by the many mills located there. All of the cotton for mill use must be trucked into the area from other producing regions. Boomi cotton is used locally by villagers for making coarse cloth, blankets, and padding.

Cotton production in Isfahan has dropped more than 25 percent since 1947-48. This area now produces less than 1 percent of the total Iranian cotton crop. The rapid growth of a large organized textile industry around the city of Isfahan probably accounts for the decline. As supplies of mill-made textiles increased, homemade cloth production declined and the need to produce Boomi cotton was subsequently lessened.

Irrigation is expanding in the Isfahan area, and some increase can be expected in agricultural production. Boomi cotton production, however, will probably continue to decline. Small acreages of Upland cotton are grown, and could increase, but the demands on the land by food crops will be too great for much expansion. Boomi cotton acreage will probably decline faster than Upland acreage increases.

Other areas

Cotton is grown throughout much of the entire western half of Iran, but its production accounts for less than 1 percent of the national crop and is declining. Practically all of the cotton is produced on small plots or along irrigation ditches. An area of some potential for cotton is in Khuzistan, where an extensive irrigation project is being developed. This area is being designed primarily to expand sugarcane production, but cotton has done well on an experimental basis in the northern section, and is likely to be grown there commercially. However, because of the tremendous work still required to build canals, develop land, and meet sugarcane production goals, much cotton will not be grown in Khuzistan for some years.

GINNING

All of Iran's cotton is saw ginned, and most of it with fairly modern American equipment. Many of the newer gins have seed cotton dryers and cleaners and lint cleaners. They generally do a good job. The equipment of some of the older gins in the northwest, mostly Russian made and installed around 1936, has become obsolete. Because these gins are not able to properly prepare the lint, their cotton may not be exported for quality reasons, by official decree, but can be sold to domestic textile mills.

In March 1963, 119 gins were scattered throughout Iran's cotton producing regions. A good many of the gins with newly installed equipment are in the recently developed Gorgan-Gonbad region. At one time, much seed cotton was trucked into Tehran from the Caspian for ginning. Then in 1961, the government decreed that cotton from subsequent crops must be ginned in the area of production. As a result, additional new gins were built in the Gorgan-Gonbad area, mostly by cotton exporting firms that had gins in Tehran.

Cotton exporters maintain that gin ownership is the only certain way they can obtain enough quality cotton for export. More than 50 percent of the cotton exported is ginned by these exporters. Such ownership has occasioned complaints from the domestic textile industry which alleges that sufficient raw cotton of good quality is not available locally. It appears, however, that local mill buyers are unwilling to pay the same premiums for quality cotton as exporters.

Gins supply most of the credit available to cotton producers. About one-third of the crop is controlled by the Cotton Board, a quasi-governmental organization, through loans to farmers. The rest is controlled by privately owned gins in much the same manner.

Cotton Board credit covers both seed and other production costs. When the Board makes a loan, the contract stipulates that a given quantity of the crop will be sold to one of the 28 government-owned gins for processing. Where production exceeds the quantity to be sold to the government gin, the farmer is free to market the excess at any gin he may choose.

Credit extended by privately owned gins may be handled in a number of ways, but generally the cotton crop is security for the loan. Thus, producers must sell all their crop to the gin making the loan. Because of the fairly keen competition among gins in the major producing regions, almost all are willing to extend credit. This availability of credit has probably influenced the expanded cotton acreage in northern Iran.

Gin companies distribute almost all of the cottonseed planted in Iran. Under such a system, there is little difficulty in establishing a new variety quickly, if adequate seed stocks are available. When Coker 100-Wilt proved to be a good variety, gins were able to achieve rapid gains in its cultivation. There is another advantage to this seed distribution system. Since each gin supplies only one variety of seed to farmers and these farmers normally return their cotton crop to the gin which distributed the seed, there is little mixing of cotton varieties except during the period when a new variety is

being introduced. Also, ginning of only one variety makes easier the job of grouping cotton into even-running lots.

Since gins generally purchase seed cotton from producers, it is to their own economic advantage to distribute the best seed available. Most gins do distribute the best, but in many cases, even the best available is rather poor quality seed.

Seed imports are not allowed except in small lots for government research. While this policy tends to preclude the rapid adoption of new varieties, it helps to keep a limited number of adapted cotton varieties in commercial production.

MARKETING

Cotton moves in fairly well-defined marketing channels in Iran. These channels are similar to those prevailing throughout much of the Middle East. Iranian cotton producers generally sell seed cotton to gins; U.S. producers, on the other hand, hire the services of gins and retain ownership of the lint cotton and seed. Iranian gins generally purchase seed cotton from farmers by variety, but are reluctant to pay premiums for quality. In major producing areas, however, competition among the various gin companies assures farmers of a reasonable price for their crop.

After cotton is ginned, the government grades bales destined for export into grades 1 through 4. Most cotton is shipped, however, on the basis of types that are supplied by the exporter.

Cotton marketed domestically may or may not be graded by the government. If cotton sold domestically is purchased from a gin engaged in both export and domestic trade, it will likely be classed by the government. Cotton from unlicensed gins, which are not allowed to sell for export, is not classed officially.

Mill buyers in Iran have shown little interest in purchasing quality cotton. They generally try to buy it as cheaply as possible and under the best credit terms possible. Gins and cotton merchants, too, are prone to be lax in quality control of the cotton they sell domestically. As a result, textile mills complain of fraudulent practices ranging from watered cotton to obviously planted foreign materials.

One of the major reasons behind this lack of "quality consciousness" on the part of mill buyers lies in their background. Many were not experienced in cotton purchasing or mill operation at the time they were employed as mill buyers. Rather they were bazaar merchants. With this background, they lean too heavily on price considerations; not enough on quality considerations. Consequently mill owners are dissatisfied with quality, and find spinning operations difficult. Official classing probably would help get cotton into even-running lots, but until mill buyers become quality conscious, Iranian mills will continue to have trouble spinning domestic cotton.

In 1961 the government, through the Bank Melli, made loans to textile mills to purchase cotton during the harvest season. These loans were made so that textile mills could select cotton of any quality as well as take advantage of the assumed lower price during harvest. Loans were made for 80 percent of the value of the cotton, and mills financed the other 20 percent. Several mills availed themselves of this credit in 1961, but participation dropped considerably in 1962 because prices failed to rise enough to offset interest paid on 1961 crop cotton.

CONSUMPTION

Presently, Iranian mills consume nearly half of each year's crop, and the remainder is exported. Both consumption and exports have increased sharply during the past 10 to 15 years, but consumption has climbed at a much faster rate as a result of the exceptional increase in textile capacity.

TABLE 2.--COTTON: Supply and demand for Iran, 1934-63

Year ¹	Beginning stocks	Production	Imports	Total supply	Consumption	Exports	Destroyed	Ending stocks	Total distrib- ution
	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales	1,000 bales
1934.....	87	128	0	215	60	122	0	33	215
1935.....	33	131	0	164	69	76	0	19	164
1936.....	19	182	0	201	74	83	0	44	201
1937.....	44	175	0	219	92	91	0	36	219
1938.....	36	173	0	209	97	72	0	40	209
1939.....	40	194	44	278	97	97	0	84	278
1940.....	84	164	0	248	97	91	0	60	248
1941.....	60	127	0	187	92	22	0	73	187
1942.....	73	74	1	148	102	0	0	46	148
1943.....	46	78	37	161	100	0	0	61	161
1944.....	61	81	6	148	81	0	0	67	148
1945.....	67	92	39	198	138	0	0	60	198
1946.....	60	64	6	130	97	9	0	24	130
1947.....	24	80	10	114	95	2	0	17	114
1948.....	17	92	0	109	78	20	0	11	109
1949.....	11	96	1	108	60	16	0	32	108
1950.....	32	129	0	161	46	105	0	10	161
1951.....	10	124	0	134	69	35	0	30	134
1952.....	30	165	0	195	70	115	0	10	195
1953.....	10	240	0	250	70	160	0	20	250
1954.....	20	275	0	295	73	204	0	18	295
1955.....	18	275	0	293	82	177	2	32	293
1956.....	32	285	0	317	90	180	0	47	317
1957.....	47	280	0	327	100	198	0	29	327
1958.....	29	320	0	349	115	190	0	44	349
1959.....	44	373	0	417	195	190	0	32	417
1960.....	32	456	0	488	200	245	0	43	488
1961.....	43	530	0	573	250	266	2	55	573
1962.....	55	425	0	480	230	220	0	30	480
1963 ²	30	525	0	555	230	290	0	35	555

¹ Beginning August 1.

² Preliminary.

Cotton consumption in Iran reached a peak of 250,000 bales in the 1961-62 season, but dropped back to an estimated 230,000 bales in 1962-63 and 1963-64.

Cotton used locally averaged 66,000 bales annually from 1950 to 1954, then rose to an average of 116,000 bales in 1955 to 1959. In the past 5 years ending in 1963-64, consumption was averaging 221,000 bales annually. This rapid increase reflects exceptionally high profits obtained by textile enterprises

during the decade of the 1950's, plus governmental stimulation through loans for building new plants and for modernizing existing facilities. These loans, made between 1958 and 1961, made possible imports of large quantities of spinning equipment, mainly from Japan and several European countries, on officially arranged petroleum-textile machinery barter.

Government-owned mills consume about a third of the cotton used in Iran. They generally buy cotton processed at government gins, which, being among the country's older plants, do not turn out as good a quality raw cotton as produced by the rest of the ginning industry. Government textile mills are using much less rayon than private mills, reflecting pressure on them to consume government-controlled stocks.

Cotton consumption in Iran appears to have reached a plateau of around 225,000 to 275,000 bales annually for the next few years. Imports of spindles, except for replacement of worn equipment, were banned in 1962, the beginning of the Third Plan for Economic Development. For the 5 years the Plan covers, the goal for cloth production in 1967, the final year of the period, has been set at slightly above that in 1962, or from 405 million yards in 1962 to 437 million yards in 1967. This small increase does not necessarily mean an increase in cotton consumption; for imported rayon staple will probably be the principal fiber to benefit from any increase in cloth production.

Rayon staple fiber imports rose from only 3,254 metric tons in 1958-59 to an estimated 25,000 tons in 1962-63. Mills prefer to spin rayon instead of cotton for a number of reasons, the most important of which is credit. Mill buyers are able to purchase rayon on 4-to-6 months interest-free credit, whereas cotton purchases must be made for cash. Even cotton purchased under the government's low interest loans plan must be paid for when it is removed from storage. The distribution system for textiles is such that mills must grant 3- to 6-months credit on textile sales, so there is an incentive to purchase raw materials on good credit terms, especially since capital not tied up in inventories such as cotton can be loaned at rates of interest up to 30 percent per annum.

Another important factor in the rising use of rayon is the preference of spinners for it. Mill buyers have given little attention to cotton quality in the past, and spinners have had all kinds of trouble when trying to spin the low quality of cotton purchased. Inexperienced textile workers further compound the difficulties when spinning low quality cotton. Rayon, on the other hand, is free from foreign material and staple length is uniform.

The rapid increase in cloth availabilities has taxed the ability of the textile marketing system. There exists in Iran an archaic system for distribution of textiles. The cloth moves through long-established channels in which a few large-scale bazaar merchants dominate the distribution system. Consumers in large cities and towns have a good selection of textiles and their demands are well met. In outlying villages, however, little has been done to reach prospective consumers. Until this system is changed, cloth consumption may not increase significantly from present levels. Hence, there is little demand for more raw cotton.

TABLE 3.--RAYON STAPLE FIBER: Imports into Iran by country of origin, 1952-61

Country of origin	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62 ¹
	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>	<u>1,000 pounds</u>
Austria.....	0	0	0	0	0	0	0	1,387	2,609	0
Belgium.....	0	0	297	0	44	11	0	44	32	0
France.....	0	0	0	(²)	54	0	271	217	419	0
Germany, West.....	22	307	719	591	2,057	2,706	4,465	5,710	8,919	0
Italy.....	0	0	92	998	1,065	619	1,391	788	3,179	0
Japan.....	0	0	0	0	0	200	844	2,072	617	0
Netherlands.....	0	0	12	0	0	80	1	704	1,611	0
Sweden.....	0	0	0	0	0	54	86	265	2,327	0
United Kingdom.....	0	0	0	0	0	135	89	223	0	0
Other ³	0	0	76	198	26	52	27	151	411	0
TOTAL.....	22	307	1,196	1,787	3,246	3,857	7,174	11,561	20,124	36,144

¹ Country breakdown not available.

² Less than 500 pounds.

³ May include additional quantities from countries listed but shown in Iranian statistics as originating in countries not producing rayon staple fibers.

Compiled from official records.

The government of Iran holds the key to the future for cotton consumption in the country. Should officials decide that more cotton textiles are needed, that they can be distributed, and that local production is desirable, added capacity could be quickly installed. Most private mill owners have indicated a willingness to expand their operation. Further, should the government become alarmed over the rapid use of imported rayon staple fiber, restricted quantities or high import duties could effectively reduce the quantity of rayon used. This, in turn, could increase cotton consumption.

Foreign trade statistics of Iran show that the country loses money by exporting cotton and importing rayon for domestic use. Imported rayon per pound valued on a c.i.f. basis is roughly 20 percent above the f.o.b. value of exported cotton. Even if the greater processing losses associated with cotton spinning, compared with those of rayon, are taken into account, the substitution of rayon for cotton is expensive to Iran from a foreign exchange standpoint.

EXPORTS

Cotton exports are Iran's second largest earner of foreign exchange, but exports of petroleum and petroleum products so overshadow all other products that cotton accounts for only around 5 percent of the foreign exchange earnings. Petroleum and its products earn 85 to 90 percent of Iran's foreign exchange annually.

Cotton exports rose to a record 266,000 bales in 1961-62, but the reduced harvest of 1962-63 resulted in a drop to 220,000 bales in 1962-63. The 1962-63 decline should be viewed as a temporary setback rather than a reversal of the upward trend of recent years since the level of exports in 1963-64 is expected to reach a record high of 290,000 bales.

Cotton exports averaged 124,000 bales annually during the period 1950-54; in 1955-59 they averaged 187,000 bales annually; and in the past 5 years through

TABLE 4.--COTTON AND PETROLEUM: Exports from Iran by value, averages, 1934-49, annual 1950-60

Year beginning March	Cotton	Petroleum	Total Exports	Percent of Total	
				Cotton	Petroleum
	Million rials ¹	Million rials ¹	Million rials ¹	Percent	Percent
<u>Averages</u>					
1930-34.....	70	1,180	1,725	4.1	68.4
1935-39.....	79	1,642	2,283	3.5	71.9
1940-44.....	29	2,601	3,370	.9	77.2
1945-49.....	57	11,237	13,299	.4	84.5
<u>Annual</u>					
1950.....	869	22,184	25,747	3.4	86.2
1951.....	337	6,843	11,234	3.0	60.9
1952.....	943	12	5,844	16.1	.2
1953.....	2,052	263	8,689	23.6	3.0
1954.....	2,582	2,008	12,296	21.0	16.3
1955.....	1,674	9,405	17,439	9.6	53.9
1956.....	1,677	15,909	23,840	7.0	66.7
1957.....	1,925	19,298	27,651	7.0	69.8
1958.....	1,494	22,859	30,800	4.9	74.2
1959.....	1,813	49,450	57,151	3.2	86.5
1960.....	2,167	53,391	61,750	3.5	86.5

¹ 1 rial = 1.32 U.S. cents

Compiled from official records.

1963-64, exports averaged 242,000 bales annually. This upward trend reflects the rapid rise in cotton production, and it would be even higher but for the more dramatic increase in domestic consumption.

Several countries in Western Europe are important purchasers of Iranian cotton. The United Kingdom, France, West Germany, and Italy have been the most important markets. Russia has traditionally been a substantial buyer, and in recent years, Hungary and Czechoslovakia have bought sizable quantities. Japan also normally buys a large annual volume of Iranian cotton.

TABLE 5.--RAW COTTON: Exports from Iran by country of destination, averages 1934-38, 1945-49, annual 1950-61

Year ¹	Belgium	Czecho- slovakia	France	Germany, West	Hungary	Italy	Japan	United Kingdom	USSR	Other	TOTAL
	Bales	Bales	Bales	Bales	Bales	Bales	Bales	Bales	Bales	Bales	Bales
<u>Averages:</u>											
1934-38.....	(²)	(²)	(²)	11,749	(²)	(²)	1,211	(²)	65,641	2,893	81,494
1945-49.....	465	(²)	1,842	2,015	(²)	1,672	(²)	(²)	(²)	4,446	10,440
<u>Annual:</u>											
1950.....	11,142	(²)	5,879	13,196	(²)	20,971	9,553	(²)	(²)	29,969	90,710
1951.....	161	(²)	762	12,304	(²)	2,751	51	5,025	9,025	625	30,704
1952.....	2,535	(²)	537	34,153	(²)	4,694	16,328	597	16,025	18,220	93,089
1953.....	2,443	(²)	12,125	41,819	(²)	4,028	60,516	8,589	11,312	25,427	166,259
1954.....	5,071	(²)	63,832	34,980	(²)	25,707	32,127	12,814	19,795	13,081	207,407
1955.....	386	(²)	57,136	22,556	(²)	28,118	10,908	24,113	7,647	15,873	166,737
1956.....	1,130	(²)	71,888	8,561	(²)	22,771	13,935	19,410	18,082	21,105	176,882
1957.....	606	14,132	49,383	31,903	16,755	15,956	16,048	34,502	16,103	11,041	206,429
1958.....	749	13,894	40,004	10,040	1,819	12,800	16,273	45,548	26,983	11,216	179,326
1959.....	441	54,624	5,824	9,259	24,779	10,031	12,814	46,085	41,088	22,345	227,290
1960.....	(²)	39,316	15,207	25,169	24,600	19,267	11,115	74,897	24,526	22,785	256,882
1961.....	294	35,069	14,188	30,915	16,277	16,870	1,621	75,411	37,046	42,924	270,615

¹ Year beginning March.² If any, included in other.

Compiled from official records.

Iranian cotton has gained a fair reputation for quality in recent years. This reputation probably results from improved ginning facilities and improved quality control by exporters. Governmental pressure for better quality control played no small part in the improvement. Too, many exporters now own gins, and by this means they are better able to acquire even-running lots of cotton for shipment.

Cotton exported to Russia and some shipments to Eastern Europe move across the Caspian Sea. All other shipments move out through the Persian Gulf port of Khorramshah. Although railroads connect major producing areas with ports on the Caspian sea and Khorramshah, most of the cotton moves to port by truck because it is cheaper. The cost of truck shipment is negotiated, while rail freight rates are fixed by the government.

The outlook for cotton exports from Iran for the next few years is clouded by numerous factors. Based on the assumptions that production will increase and consumption remain fairly stable, exports can be expected to increase. Unless there are significant political and economic changes, these assumptions seem warranted. However, Iran is going through a massive political, social, and economic upheaval which includes land reform, and even small factors in this period of change could naturally affect cotton's future.

TEXTILE INDUSTRY

Textile manufacture, long a traditional village occupation in Iran, has become the second leading organized manufacturing industry in the country, exceeded only by the oil refining industry. With a capital investment of around \$150 million, and around 40,000 people employed, the textile industry is far in front of other industrial endeavors.

Mill capacity for textiles, 95 percent of which is in cotton spinning, experienced a period of exceedingly rapid growth between 1957 and 1962. In 1963 there were almost 730,000 spindles and 15,700 looms in place, compared with 168,000 spindles and 3,000 looms in 1957. Government assistance played a leading role in the growth. Loans were made for building new plants and for modernizing existing ones. Also, two new government-owned mills were built and the two existing plants were enlarged and modernized. Government-owned spindlage increased from 58,000 to 125,000, while privately owned mills increased spindlage from 110,000 to 605,000.

Mill size, based on the number of spindles in place in early 1963, was as follows:

<u>Spindles per mill</u>	<u>Number of mills</u>
Less than 5,000.....	7
5,000 to 10,000.....	20
10,000 to 20,000	14
20,000 to 52,000	8
Total	49

Four of the eight mills having more than 20,000 spindles are the four government-owned plants. Looms are in place in 33 of the plants, but in many cases the ratio of spindles to looms is quite high, and only a part of the yarn produced by looms is made into cloth, and the rest is sold to small weaving shops and handloom operators. A desire for better balance between looms and spindles is evident in many mills still adding looms, and in the official sanction for loom imports. The result of more looms in factories will be to reduce handloom production while maintaining total production at near present levels.

Iran's Third Plan for Economic Development contains no provisions for increased textile capacity above that of 1962. Imports of spindles except for replacement of worn equipment were banned in 1962. Loom imports are still allowed, and probably will continue to be permitted for some time. Because of the ban on spindle imports, however, loom imports may slow down considerably.

The rapid expansion in textile mill capacity has achieved the official goal of reducing reliance on imported textiles. Imports in 1955 were equivalent to 119 million yards, but by 1962, they had dropped to around 22 million yards. The Third Plan calls for textile imports of 77 million yards of cloth presently not made in Iran. Domestic production in 1967 is estimated at 437 million yards, only slightly above the 405 million yards produced in 1962.

An increase in finishing capacity is the only change planned for the textile industry in the Third Plan. Around \$15 million worth of new equipment for finishing, dyeing, and printing is included in the Plan.

Increased textile mill capacity has thus far had little effect on the handloom industry, but additional power looms and finishing capacity can be expected to materially reduce handloom production. Between 1955 and 1962 handloom production dropped from an estimated 55 million yards to 44 million yards, an insignificant drop when the more than 400 percent increase in mill capacity is considered.

Imported cloth is subjected to a duty of 5 rials (6.65 U.S. cents) per meter, which amounts to roughly 25 percent of the value of the domestic cloth consumed in Iran. The import duty on finer quality cloth, not generally produced in Iran, is the same as on coarser cloth, so obviously the duty is designed to protect domestic producers.

Since recently installed textile machinery in Iran was required by official decree to be new equipment, much of the capacity is fairly modern. Efficiency of operation, however, does not generally reflect the newness of the machinery. Lack of trained supervisory and technical personnel has tended to keep labor and machine efficiency low. With experience gained through time, some of this problem should be overcome, and efficiency should improve. In fact, improved efficiency is the basis for the expected small increase in production by 1967 envisioned in the Third Plan.

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